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ABSTRACT

Methods are described for comparing the educational goals of parents and school administrators. Data used to define goals consist of statements that parents made in the course of tape-recorded, personal interviews. A list of 450 goal statements was then categorized by the same parents and by a sample of school administrators. Percentages were then calculated of the parents and administrators who placed their statements under each category. Although focusing on differences in order to make comparisons, this research indicates that agreements were dominant. The second section outlines in detail the methodological procedures used in the preceding section. Procedures are described with some over-simplified "sample" data so that each process can be illustrated. In order to cope with the quantities of data produced by survey work, some available computer programs are also described. (Author/RC)

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**EDUCATIONAL GOALS: A Comparison Between Parents
And Administrators.**

**PART I: Measurement and Analysis Techniques for
Studying Educational Goals**

PART II: Technical Discussion

Paper presented to the
American Educational Research
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by:

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MEASUREMENT AND ANALYSIS TECHNIQUES
FOR STUDYING EDUCATIONAL GOALS

This paper will discuss a comparison between school administrators and parents. The primary intent of this comparison is not to conclude what differences exist between these two groups of people--that we cannot do because of certain sampling and sample size problems--but to illustrate the process of comparison using the techniques developed in the Albuquerque goals study. Accordingly, this paper will focus predominantly on methods rather than on findings.

Before turning to the problems of comparison, let me review briefly the purpose of the goals study and how data were gathered. One purpose of this study is to identify areas of potential or actual conflict between various constituent groups of the public school system. Existence of conflict, we believe, implies the existence of different goals held by the various constituent groups. That is, we expect conflict situations to arise when constituent groups have different goals for their school (or perhaps the same goals at different priorities).

How can one test such a proposition as this? It clearly entails having some measurements of "goals," however they are defined, and having some method for collecting goals to form an aggregate measure for each constituent group. These are difficult requirements both conceptually and practically and we don't pretend to have solved them in the following comparison. What we have done, however, is to begin to define the problems with some actual data and we are surprised and pleased, as we hope you will be, with the reasonableness of the preliminary results.

The data we have used to define goals consists of statements that parents made in the course of tape-recorded, personal interviews. Every attempt was made

to extract as much information as possible in these interviews about all kinds of goals for schools--from realistic to Utopian, from rational to unexpectedly peculiar. The results of these interviews produced literally thousands of goal statements. By the way, our parents were sampled to represent relatively low-income minority groups many of whom had some difficulty because of inexperience in phrasing goal statements. However, they have reported to the interviewers that they generally enjoyed the process and some said they had not worked so hard since school. Their goal statements, as you will see, are not the typical jargon used by some of us.

Once the statements were typed up, we eliminated redundancies and ambiguities while trying to hold on to the original wording insofar as possible. Our list of statements is still full of redundancies and ambiguous statements, but we feel that we would rather be too lenient with the cutting process than run the risk of ending up with another "typical" list of goals, such as those produced in graduate students' exercises.

The list of 450 goal statements was then categorized by the same parents who had given us the statements and also by a sample of school administrators who were kind enough to spend their time on this project. To understand this process of categorization, imagine a deck of 450 cards, each with a different goal statement written on it, which is then sorted into 37 bins, each one labeled with a category name. For example, goal statement 20 which read:

"Quick learners should receive more help"

could be placed with other goal statements under a category label such as:

"Aid the Student who is slow to learn or quick to learn" or

"Give the student who wants to go to college an adequate foundation and provide guidance for those entering college."

After all of the goal statements were placed in categories (with a couple of extra categories as dumping grounds), we calculated the percentages of the parents and of the administrators who placed their statements under each category. For example, the above goal statement about "quick learners" was categorized as follows:

<u>CATEGORY</u>	<u>PARENTS</u>	<u>ADMINISTRATORS</u>
"Aid the Student..."	66.7%	0.0%
"Give...adequate foundation..."	16.7%	40.0%

This example shows that in some cases there are disagreements between parents and administrators on how goal statements should be categorized, and Table 1 lists the statements which show the largest differences.

TABLE 1. Statements Most Differently Categorized By Parents And Administrators.

10. There should be more seminars on current events operated after school hours.
20. Quick learners should receive more help.
64. College-bound students should take courses which would help them earn money.
80. Provisions should be made to teach home-bound students.
110. Students should be taught to think.
117. Students should be taught about the social aspect of life.
144. School should provide rosters of technical schools where advised training is available.
171. Courses should be more comprehensive.
185. The educational system should meet the needs of the students.
253. Student should not graduate until they are 18.
259. Parents should be notified if their child becomes ill.
275. The Board of Education should have full control of the students.
281. School should have stronger discipline but should use physical or corporal punishment rather than suspension.
288. If a student is in serious discipline trouble the principle should call the parents.
292. All of students who create discipline problems should be placed in a corrective school where the discipline is extremely rigid.

- 295. Students should be allow to leave class without permission.
- 302. A "hotline" should be established to help students anonymously with their problems.
- 311. A room should be provided where students can go if they don't want to go to class.
- 330. Coaches must realize that they are teachers and educators as well as coaches.
- 332. Students should be given enought assignments so that they have to study to get by.
- 338. No student should ever fail.
- 405. There should be a regular newsletter to the parents to keep them informed of school activities.
- 409. There should be more communication between parents and school board.

It is difficult to interpret these differences, however, because the statements in Table 1 are of such different types and represent such different values that they cannot be treated equally.

We can remedy part of this interpretation problem because we have some information about which statements the respondents value. Prior to categorization we asked all respondents to sort the goal statements into three preference categories: like, dislike, and no preference. With this information we can select just those statements which respondents value and base the comparison on these statements.

Table 2 lists the statements and the proportion of the time they were "liked." For comparative purposes, we will look only at those statements which were liked by 75% or more of both groups.

TABLE 2. Valued Statements (percent categorized as "Like,")

<u>STATEMENT NO.</u>	<u>ADMINISTRATORS (%)</u>	<u>PARENTS (%)</u>
10	45	52
20	35	43
64	45	71

80	95*		81*
110	95*		86*
117	90*	-X-	62
144	95*		86*
171	30	-X-	86*
185	95*		86*
253	0		10
259	95*		100*
275	10		38
281	0		29
288	95*		100*
292	20		29
295	5		5
302	25		57
311	15		19
330	100*		81*
332	40		52
338	5		33
405	90*		90*
409	75*		81*
	(N = 20)		(N = 21)

There are nine statements which fall into 75% or more "liked," as shown above in Table 2 by asterisks.

TABLE 3. Comparison On Categorization Of Goal Statements.

STATEMENT	% OF RESPONDENTS IN (CATEGORY)					
80	ADMIN: 25(3) 30(6) <u>45(16)</u> PARENT: 4(2) 8(3) 4(5) 21(6) 4(8) 4(10) <u>21(16)</u> 8(17) 25(19)					
110	ADMIN: 5(4) <u>5(5)</u> <u>45(6)</u> 10(8) 5(12) 15(13) 5(18) 10(19) PARENT: 8(3) <u>42(5)</u> <u>25(6)</u> 4(10) 17(13) 4(19)					
144	ADMIN: <u>30(2)</u> <u>70(14)</u> PARENT: <u>67(2)</u> 13(6) 4(11) <u>13(14)</u>					
185	ADMIN: 5(2) 5(3) 10(5) 15(6) <u>25(8)</u> 5(12) 5(16) 5(17) 15(18) 10(19) PARENT: 8(3) 13(5) 8(6) <u>4(8)</u> 8(10) 4(11) 13(12) <u>25(14)</u> 4(18) 13(19) ADMIN: <u>50(25)</u> 10(26) <u>25(29)</u> <u>5(33)</u> 5(35) 5(37)					
259	PARENT: 4(21) 4(23) 4(24) <u>25(25)</u> <u>4(29)</u> <u>50(33)</u> 8(35)					
288	ADMIN: 20(24) <u>30(25)</u> 5(26) <u>45(35)</u> PARENT: 4(22) 17(24) <u>8(25)</u> 13(29) 4(30) 17(33) <u>21(35)</u> 4(36) 13(37) ADMIN: <u>15(23)</u> 5(24) 5(25) <u>50(27)</u> 10(28) 10(31) 5(37)					
330	PARENT: 4(22) <u>46(23)</u> 4(25) <u>8(27)</u> 4(29) 17(31) 17(37)					

	ADMIN:	5(25)	85(29)	5(30)	5(33)	
405	PARENT:	4(21)	4(22)	8(25)	<u>29(29)</u>	4(30)
		4(31)	21(33)	17(35)	8(37)	
	ADMIN:	5(26)	<u>75(29)</u>	5(30)	10(33)	5(37)
409	PARENT:	<u>29(35)</u>	<u>29(29)</u>	25(33)	4(35)	
		13(37)				

In Table 3, the symbols represent the percent of the comparison groups that placed the statement in the category identified by parentheses. Thus 21(5) means that 21% put this statement in category #5. Table 4 lists the categories referred to in this comparison.

TABLE 4. Category Definition By Number.

1. Provide an opportunity to participate in competitive athletics.
2. Provide vocational training.
3. Aid the student who is slow to learn or quick to learn.
4. Develop a sense of decency; right and wrong; and honesty.
5. Develop self-awareness, individuality, and a purpose for living one's life.
6. Develop the students' basic academic skills.
7. Provide an opportunity for development of physical fitness.
8. Prepare students to function in society as a citizen.
9. Develop an appreciation of one's own cultural heritage.
10. Develop tolerance and respect for others, regardless of their ethnic origin, religion, sex, or age.
11. Give the student who wants to go to college an adequate foundation and provide guidance for those entering college.
12. Develop talents, interests, and hobbies which students can enjoy in adult life.

13. Develop the ability to express one's thoughts clearly through the written or spoken word and develop the ability to comprehend the written or spoken words of others.
14. Expose students to opportunities for careers and guide them in making a career choice.
15. Develop an appreciation of the history and philosophy of religion.
16. Provide aid to the student who is emotionally handicapped.
17. Prepare students for the roles of spouse, parent, or single adult.
18. Prepare students to manage the practical aspects of adult life.
19. Spare
20. Community use of school facilities.
21. Student choice of courses and activities.
22. Personality of teachers.
23. Learned skills and knowledge of teachers.
24. Discipline by formal authority.
25. Efficient administration of the school.
26. Food service.
27. Training and evaluation of teachers.
28. Academic standards.
29. School-community interaction.
30. Discipline by guidance and training.
31. Teacher interaction with students in the classroom.
32. Facilities and equipment for students' education (libraries, buildings, texts, classrooms, etc.)
33. Parent-teacher interaction.
34. Keeping students off the streets and off the parents' hands.
35. Discipline by parents and parent-teacher communication.
36. Counseling services for students -- such as testing and scheduling.

37. Spare

The entries of Table 3 have been underlined to help identify the greatest disparities in categorization (about 20% or more). Thus, using statement 110 as an example ("students should be taught to think"), we see that parents tend more than administrators to classify this under:

"Develop self-awareness, individuality, and a purpose for one's life."

Whereas, administrators tend more than parents to classify this statement under:

"Develop the students' basic academic skills."

Just a moment's reflection shows how some misunderstandings could arise as the two groups conceived of programs to help students learn to think.

However, these tables raise as many questions as they answer. For example, why do only 5% of the school administrators and 33% of the parents "like" the statement "no student should ever fail?" Why do 86% of the parents and only 30% of the administrators sampled "like" the statement "courses should be more comprehensive?"

One of the challenges ahead of us is to design a sampling frame that will give us enough data to make accurate estimates of these group differences. Another challenge is to structure our responses so that we can look more deeply into the sources of the differences between parents and administrators. Are they due to differences in language or to real differences in expectations?

In closing it is worth noting that although this paper has focused on differences to be able to make comparisons, the dominant finding is that there are mostly agreements--at least in Albuquerque; at least in our sample. We find, for example, that when parents and administrators rank categories (from best to like least), there is an overall correlation of about 0.8 between

the two lists. Further, we should not forget that the differences discussed in this paper could only produce nine statements out of 450 where there were clear differences. We can only hope that these agreements rest on true similarities in expectations and do not result from mere language.

Technical Discussion

The following section outlines in detail the methodological procedures used in the first part of this paper. The procedures are described with some oversimplified "sample" data so that each process can be illustrated. In order to cope with the quantities of data produced by survey work some available computer programs are also described.

At the outset one needs to note that we have not "measured" respondents' goals for schools. There are characteristics of people's goals that are not easily, and perhaps not possibly, reducible to numeric properties. These are the personal subjective characteristics that are more suitably summarized by journalistic efforts than by numerical indices.

Statistics has been some help, however, in summarizing or enumerating the quantitative aspects of goals, such as how many times goal statements are categorized differently, which categories are most popular, etc. In short, we have counted rather than measured aspects of people's goals for schools.

This approach has introduced special problems in the comparisons between groups of respondents. As this work progresses, these analytic problems will receive more attention. The following work represents only the most preliminary work.

Aggregating the data: The Distribution Matrix

The first step in the analysis is to create the distribution matrix. This matrix consists of the raw data aggregated over all respondents in a particular group (e.g., parents). The matrix shows how many respondents put each of the goal statements into the possible category boxes.

For example, if there were 4 respondents (parents), 3 categories and 5 goals statements, the raw data might look like Figure 1.

	1	2	3		1	2	3		1	2	3		1	2	3	CATEGORIES (3)
1	1				1				1				1			
2		1			2		1		2				2			
3	1				3	1			3				3			
4	1				4		1		4			1	4			
5			1		5			1	5			1	5			
	<u>1</u>				<u>2</u>				<u>3</u>				<u>4</u>			RESPONDENTS (4)

FIGURE 1. RAW DATA FOR FOUR RESPONDENTS

In this case, the distribution matrix would be the sum of the raw data matrices and would produce Figure 2.

	1	2	3
1	3	1	0
2	2	2	0
3	4	0	0
4	1	2	1
5	1	0	3

FIGURE 2. DISTRIBUTION MATRIX (RAW AGGREGATE SCORE)

To interpret the distribution matrix, first look at row 3. All 4 respondents put this statement in category 1. It seems reasonable to assume that this goal statement exemplifies or is a good operationalism of category 1. So too with goal statement 1 (row 1), yet here one respondent disagreed and we may want to weight this statement somewhat less than statement 3 to indicate that we are not on as firm ground.

One way of representing the distribution matrix that gives an intuitively clear feeling of the homogeneity of response agreement is to let the cells represent percent agreement on categorical location. For example, the distribution matrix of Figure 2 would produce the matrix of Figure 3,

	1	2	3
1	75	25	0
2	50	50	0
3	100	0	0
4	25	50	25
5	25	0	75

FIGURE 3. DISTRIBUTION MATRIX (PERCENT AGGREGATE SCORE)

which illustrates the clear agreement on statement 3 and the less firm but predominant agreement on statements 1 and 5. Statements 2 and 4 might be worth looking at to see if there are ambiguities or connotations that confuse respondents. If not, they may be useful as general, if vague, goal statements or they may indicate the absence of a category name. They may also be statements upon which an otherwise homogeneous group (parents) simply do not agree.

The Definition Problem

Even with the distribution matrix in percent aggregate form, there remains a question as to how well we have summarized the goals of the respondents. The problem here is a definitional problem.

If we choose to define a group of respondents in full detail, considering every possible categorization that might represent valid individual conceptualizations of goals, then the above distribution matrix does an adequate job. The percent aggregate matrix gives an overall picture (the 75%-plus cells) and incorporates the minority view and noise in the data as well (25%-minus cells). We will later want to consider the implications of not being able to separate minority views from error and ambiguity.

On the other hand, if we feel that the goals of a group of respondents are of significance only insofar as they clearly represent consensus and agreement within the group, then the distribution matrix contains large amounts of useless information. A more appropriate aggregated data matrix might be as shown in Figure 4 where the only data shown is that which exemplifies clear agreement.

	1	2	3
1	1		
2			
3	1		
4			
5			1

FIGURE 4. SUMMARY DISTRIBUTION MATRIX

We will not use this summary matrix explicitly, but it represents an easy summarizing technique which will be useful later. It also represents a logical assumption which will be used to screen data in some of the computer programs that follow.

Comparing Groups of Respondents: The Difference Matrix

Once we have summarized a group of respondents in a composite distribution matrix, we will at some point want to be able to say whether this group of respondents is the same as, or different than, another group. This is the comparison problem, and it is such an intractable problem that we will have to make some assumptions to even get started on it.

Suppose that there are two distribution matrices, each representing a different respondent group, say parents and school administrators. One conceptually clear way of expressing difference or likeness is by subtraction, cell-by-cell. The resulting matrix (called the difference matrix) contains all of the information about group differences and information about where these differences exist. Figure 5 summarizes the two distribution matrices and shows the resulting difference matrix.

Old Distribution Matrix "Parents"			New Distribution Matrix "Administrators"		
75	25	0	100	0	0
50	50	0	50	0	50
100	0	0	50	50	0
25	50	25	25	25	50
25	0	75	25	75	0

FIGURE 5. DIFFERENCE MATRIX

RESULTING DIFFERENCE MATRIX

25	25	0	(50)
0	50	50	(100)
50	50	0	(100)
0	25	25	(50)
0	75	75	(150)

(scores)

FIGURE 5. DIFFERENCE MATRIX (cont'd.)

The difference matrix contains enough information to answer several comparative questions concerning the two groups. For example, using the difference matrix alone, one could find which goal statements were differently categorized by each of the two groups. To show how this question would be answered, we will use the example in Figure 5 with a reminder that the real difference matrix would be 450 statements long by 37 categories wide (16,650 cells). Because of the size of real difference matrix, the sample will be the last difference matrix to appear in print. While using it to answer some comparative questions, we will find a way to summarize the information it contains in more manageable form.

Because the sample matrices in Figure 5 are so small, a few moments study will show that only in one case (statement 5) did the two groups really differ in the categorization of a well-defined statement. There are some real differences in statements 2 and 3, but in both of these cases, there was enough individual variation (or noise) within one or both of the groups to make a comparison between categorizations difficult.

The difference matrix flags each statement where there is both clear intragroup definition and intergroup disagreement by having the highest scores along the row for that statement--this makes the statement easy to find and to interpret.

The difference matrix does not perform as well on the task of discovering which statements are similarly categorized, however. Both statement 1, which is the only case where the two groups agreed on a well-defined statement, and statement 4 have the same row data. Yet statement 4 is the most poorly defined of all the statements in terms of being inconsistently categorized within a particular group. Why should two statements so differently categorized give rise to the same row data in the difference matrix?

The answer illustrates a weakness of the difference matrix. Because the difference matrix is constructed by simple subtraction, it gives the same results for the difference between two large numbers or for the difference between several small numbers. By itself, the difference matrix does not allow the two cases to be distinguished. On the other hand, the matrix is useful in detecting well-defined and dissimilarly categorized statements because this situation produces a unique case of finding the difference between a large and a small number.

Table 1 summarizes this situation and illustrates some intermediate cases (statements 2 and 3). This table also shows the vector of total scores for each statement (in parentheses next to the difference matrix in Figure 5) which can be used as a summary device without further loss of information. For notational convenience, this vector of scores is referred to as the difference vector.

	<u>Parents</u>	<u>Comparison</u>	<u>Administrators</u>	<u>Difference Vector</u>
1	Well defined	(good agreement)	very well defined	50
2	Poorly defined	(medium agreement)	poorly defined	100
3	Very well defined	(medium agreement)	poorly defined	100
4	Very poorly defined	(good agreement)	very poorly defined	50
5	Well defined	(poor agreement)	well defined	150

Key: Column 1: Statement number

Column 2 and 4: Intragroup definitional agreement

Column 3: Intergroup agreement on categorization

Column 5: Row totals of the difference matrix

TABLE 1. SUMMARY OF FIGURE 5 MATRICES
(AND THE DIFFERENCE VECTOR)

Table 1 finally illustrates the pattern necessary for the analysis of real data. Notice that the largest elements of the difference vector identify those statements which have a relatively consistent categorization pattern within a group of respondents (good definition) with a relatively different pattern between groups (poor agreement). Such a pattern is necessary for simplifying the task of comparing two 450 X 37 distribution matrices--although other patterns could be equally useful. This difference vector has the virtue that it calls attention to groups disagreement, which has clear and useful policy implications for the data to be analyzed.

The analysis which follows was done on the University of New Mexico computer. The programs are in FORTRAN and are available for the asking from the National Institute of Education. A brief summary of the programs might be useful at this point to illustrate the logical operations.

INTERVU (program name)--an interactive program to create the data file for each respondent. The file contains the raw data of Figure 1.

GROUP--collects individual respondent data files to form the group distribution matrices (raw and percent) of figures 2 and 3.

COMPAR--collects the output files produced by GROUP and creates the difference matrix and difference vector for two groups of respondents.

CHECK--essentially similar to COMPAR, this program searches for the largest elements of the difference vector and locates statements in the "extra" categories (19 and 37).

PREFER--creates individual respondent data files from preference sorting of each statement into "like, dislike, neutral" categories.